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HASTI

Linking Core Standards

to

Student Success

Indiana Department of Education

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Standards – Why and How?

- *Indiana established world-class academic standards that clearly outline what students should know and be able to do at each grade level and subject area*.
- Adopted by the Indiana State Board of Education September, 2000
- Standards adoption is included in Indiana Code Article 32 "…revision must occur on a cyclical basis that coincides with the textbook adoption cycle"

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No Child Left Behind

- **By setting standards, measuring progress, and holding states accountable for their students' achievement, states can ensure that no child lacks the basic skills needed to succeed in our increasingly competitive, global economy.**

Indiana's Academic Standards for Science Revision

- Revision process began in fall, 2008
- Committees of teachers, teacher educators and scientists met to draft revisions
- Goal is to have the revised standards approved by the State Board of Education in 2009

Indiana's Core Standards

- The **Core Standards** build upon *Indiana's Academic Standards* by integrating multiple Standards Indicators into a small number of instructionally coherent targets.
- Simple language – smaller number of important topics

Indiana's Core Standards

- The **Core Standards** give proper weight to concepts central to advancement across subsequent grade levels.
- Learning Progressions (Everything you need to know for the next grade)

Learning Progressions

- Require thinking about the what and how concepts are presented so that they build on each other
- Suggest most appropriate times for introduction of core concepts
- Basis for assessing student understanding
- Is *NOT* a lock-step sequence

Learning Progressions

- **Core Standards for Grade 2 Science**

  The Nature of Science - *Comparing Observations*

  Observe and measure properties of objects and substances using appropriate tools. Compare observations in terms of shape, size, weight, color and number.

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- **Core Standards for Grade 3 Science**

  The Nature of Science: Reproducibility

  Work cooperatively to identify and investigate questions that can be examined using a fair test. Confirm that if the investigation is repeated, similar results are possible.

Learning Progressions

- **Core Standards for Grade 4 Science**

  The Nature of Science - *Supporting Evidence*

  Recognize that the results of repeated experiments may be different and be able to identify possible reasons for the differences. Support findings and conclusions with data from investigations and print resources.

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  The Nature of Science: Reproducibility

  Work cooperatively to identify and investigate questions that can be examined using a fair test. Confirm that if the investigation is repeated, similar results are possible.

Guided Inquiry Using the 5 E's

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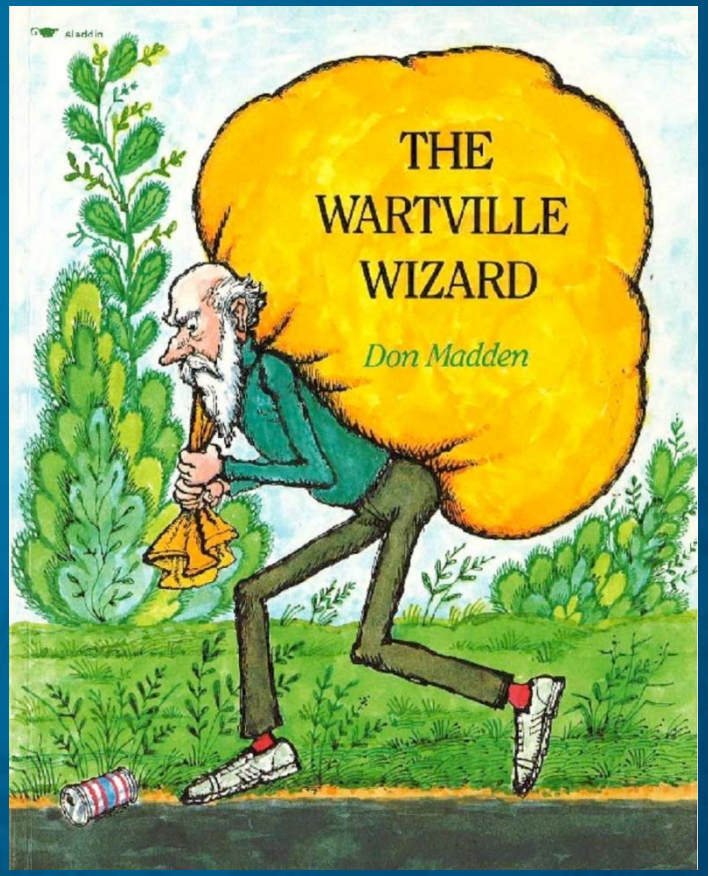
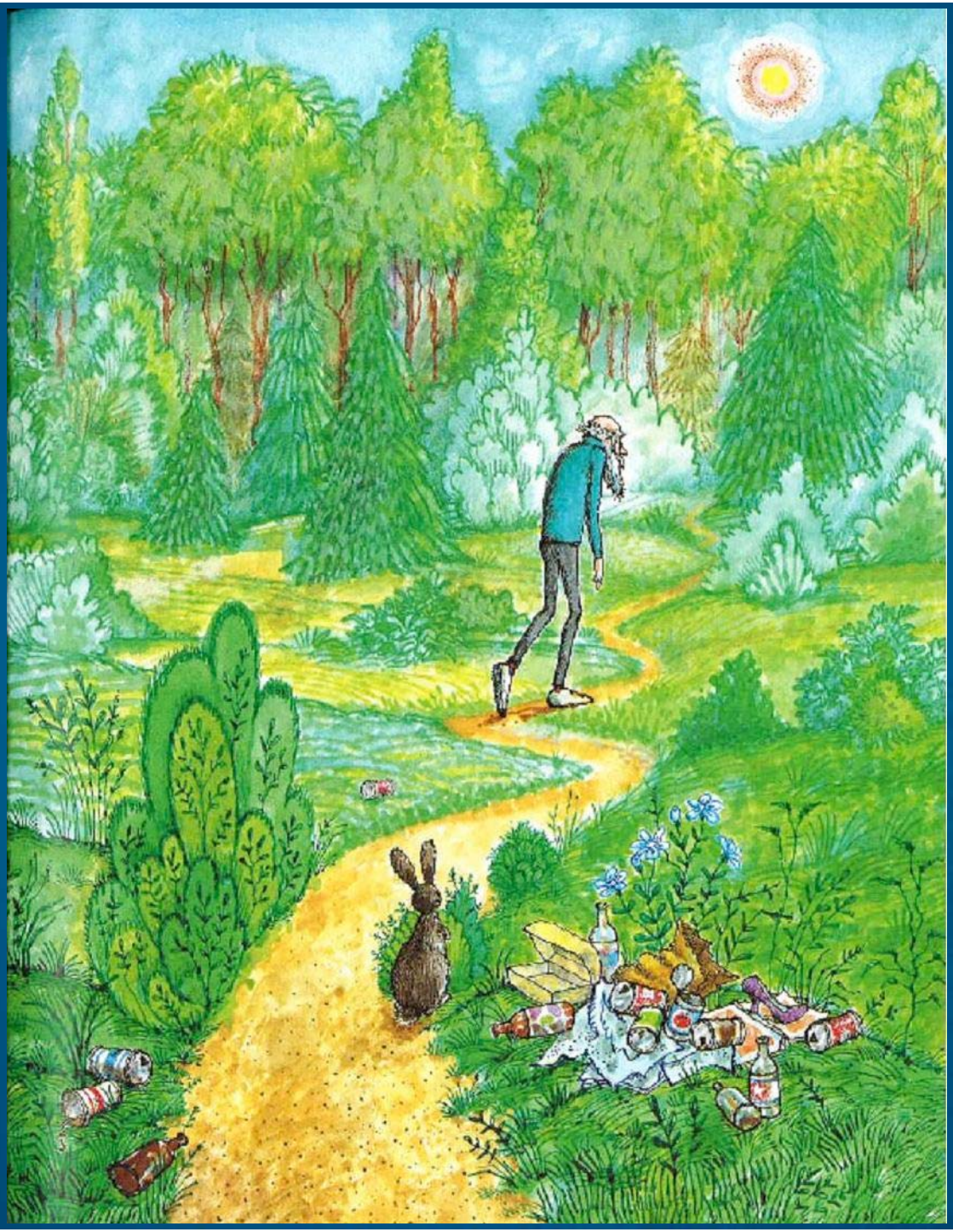
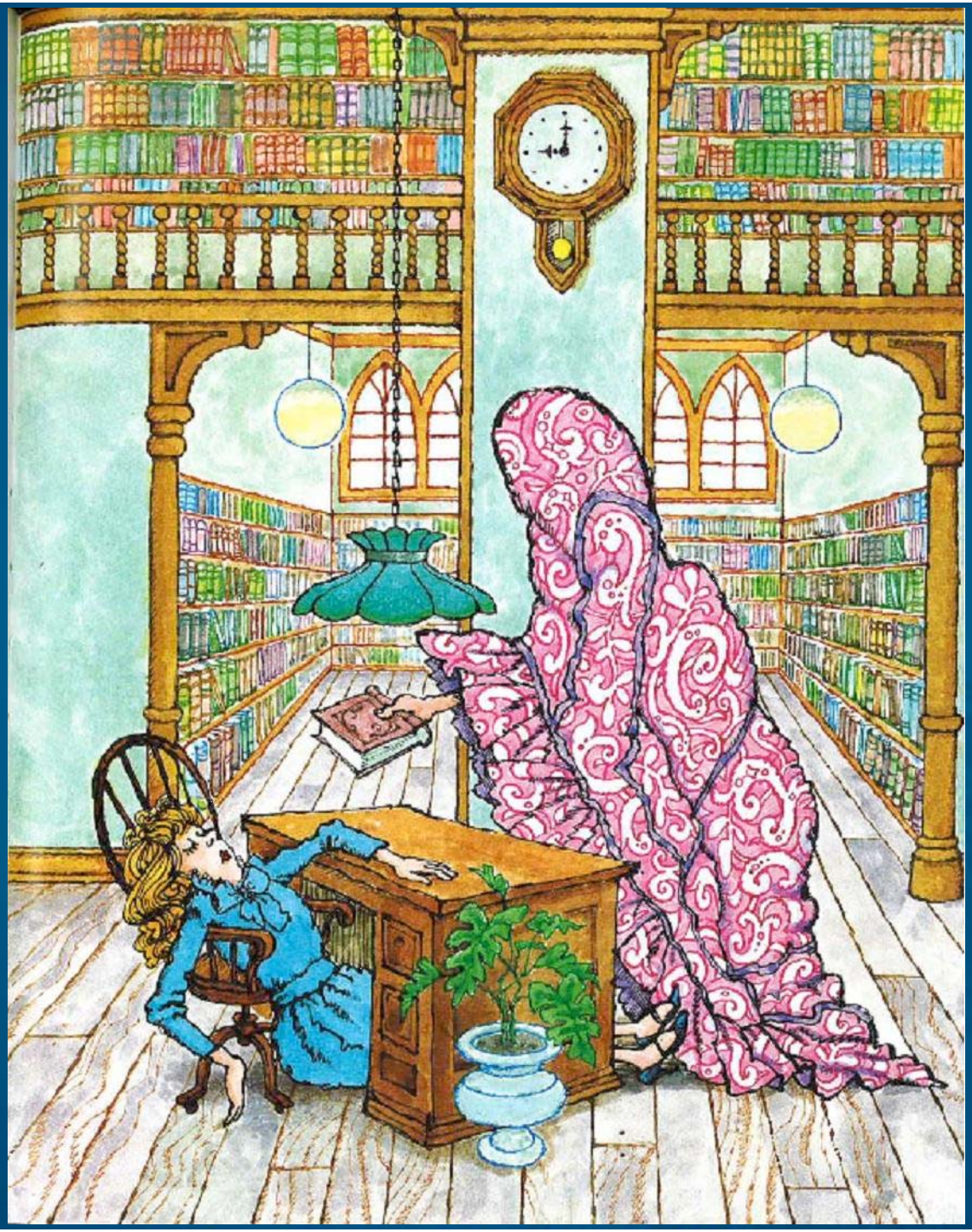
Guided Inquiry using the 5E's

- Engage

  Read The Wartville Wizard by Don Madden







Explore

- Short of being a wizard – how can you stick things together?
- Brainstorm questions
- Develop an "*investigatable"* question
- Make and test predictions about which tape sticks better using the "Inquiry Place Think Sheet"
- Write a procedure for how to test for the stickiest tape

Explain

- Student teams share their “Inquiry Place Think Sheet”
- Students provide evidence-based evaluations
- Students listen critically to explanations to others

Where to next?

Elaborate

- Students record conclusions in their science notebooks and any data that they collected.
- Students will also write a justification for their explanations using evidence

Evaluate

- Students assess their own learning by reviewing their work in their science notebooks and reflecting on their work.
- Teachers observe and assess student work as students apply the core standard in a new setting

Recommended Resources for Science Notebooks

- Science Notebooks – Writing About Inquiry by Brian Campbell and Lori Fulton

- Using Science Notebooks by Michael Klentschy

Recommended Resources:

- Picture-Perfect Science Lessons by Karen Ansberry and Emily Morgan

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